

Name: _____

Date: _____

Exam: Function Reflections (Practice version 21)

1. Let function f be defined by the polynomial below:

$$f(x) = 2x^4 - 4x^3 - 9x^2 - 3x + 8$$

Draw lines that match each function reflection with its polynomial:

Reflections

Polynomials

$-f(x)$ •

• $-2x^4 + 4x^3 + 9x^2 + 3x - 8$

$-f(-x)$ •

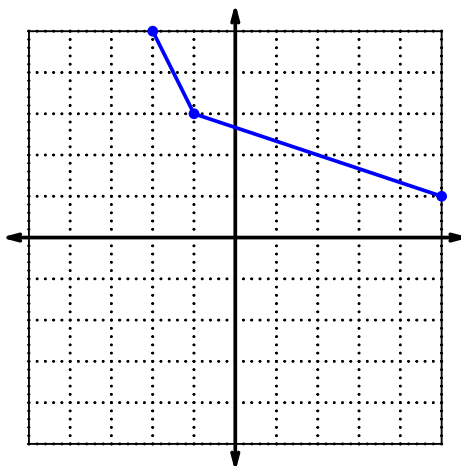
• $2x^4 + 4x^3 - 9x^2 + 3x + 8$

$f(-x)$ •

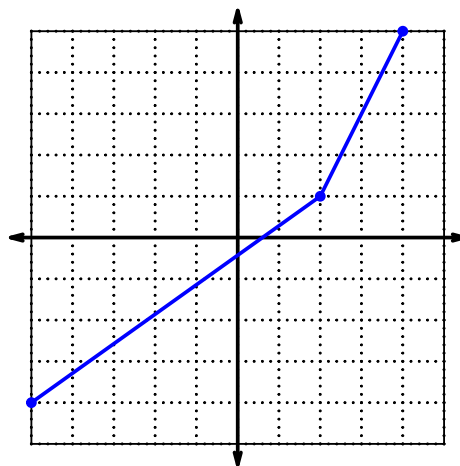
• $-2x^4 - 4x^3 + 9x^2 - 3x - 8$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.

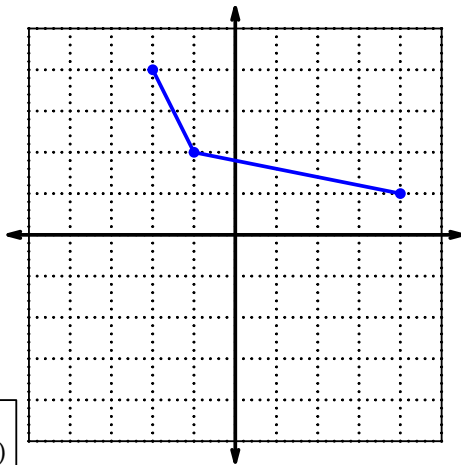
• $y = g(x)$
• $y = g(-x)$



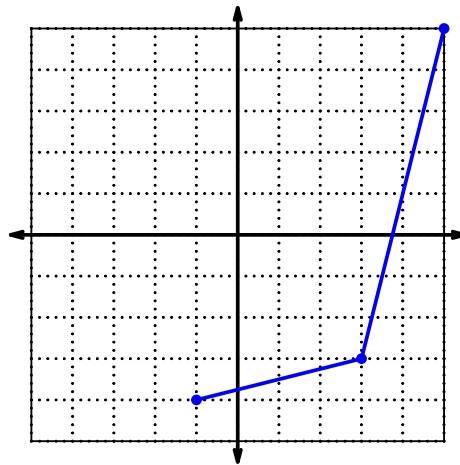
• $y = h(x)$
• $y = -h(x)$



• $y = m(x)$
• $y = -m(-x)$



• $y = p(x)$
• $y = p^{-1}(x)$



Exam: Function Reflections (Practice version 21)

For all questions on this page, the functions f , g , and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	6	2	9
2	9	8	3
3	1	5	7
4	3	9	8
5	8	1	1
6	4	3	5
7	5	4	2
8	2	7	6
9	7	6	4

3. Evaluate $g(3)$.

4. Evaluate $h^{-1}(2)$.

5. By filling more rows of the table, it is possible to make function h **odd**. If that were done, what would be the value of $h(-9)$?

6. By filling more rows of the table, it is possible to make function f **even**. If that were done, what would be the value of $f(-1)$?

Exam: Function Reflections (Practice version 21)

7. A function, f , is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g , is **odd** if $g(x) = -g(-x)$ for all x in the domain.

Let polynomial p be defined with the following equation:

$$p(x) = -x^3 + x$$

- a. Express $p(-x)$ as a polynomial in standard form.

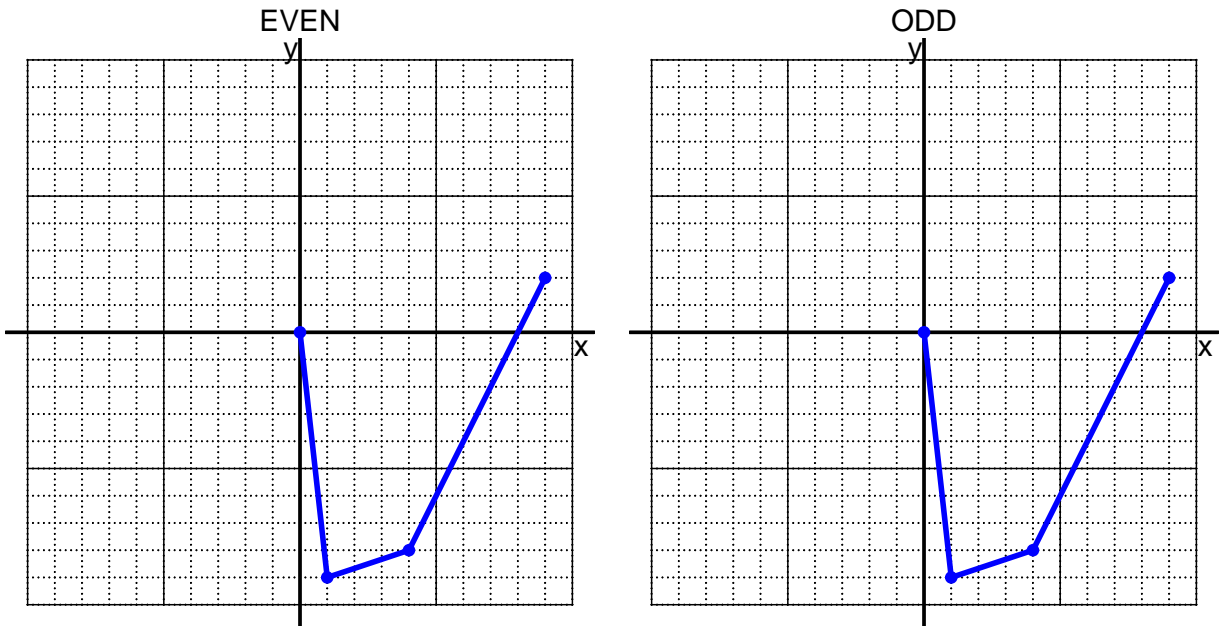
- b. Express $-p(-x)$ as a polynomial in standard form.

- c. Is polynomial p even, odd, or neither?

- d. Explain how you know the answer to part c.

Exam: Function Reflections (Practice version 21)

8. I have drawn half of a function. Draw the other half to make it even or odd.



9. Let function f be defined with the equation below.

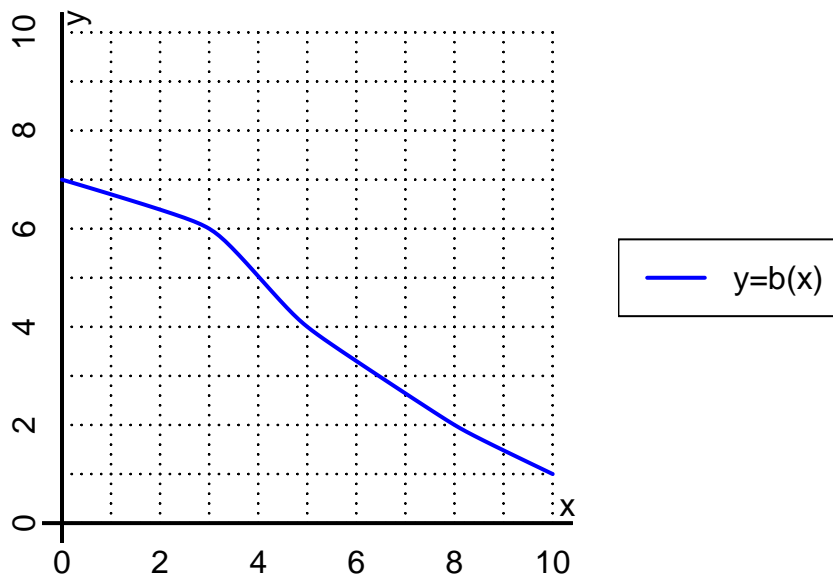
$$f(x) = 4(x - 5)$$

a. Evaluate $f(21)$.

b. Evaluate $f^{-1}(68)$.

Exam: Function Reflections (Practice version 21)

10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(8)$.

b. Evaluate $b^{-1}(4)$.

Exam: Function Reflections (Practice version 21)

11. Function f is defined by the table below.

a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	-3			
-1	-6			
0	0			
1	6			
2	-3			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?